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Overview

- Touch Panel for operator control and monitoring of small machines and plants
- Low-cost starter device in the Touch Panel class with graphical capability complete with all the basic functions required for simple tasks
- Pixel-graphics STN display (blue mode) with touch screen (analog/resistive)
- All interfaces (e.g., MPI, PROFIBUS DP) are on-board
- Non-Siemens PLCs can be connected using easy-to-use drivers
- The TP 170A Touch Panel is soon to be replaced by its innovative successor, the SIMATIC TP 177A.

Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Reduction of service and commissioning costs through:
  - Remote downloading of the configuration with automatic transfer recognition even via WAN (Wide Area Network) using TeleService adapter
  - Maintenance-free design (no battery) and long service life of the backlit display
- Graphics library available with off-the-shelf picture objects
- Can be used all over the world:
  - 21 languages can be configured incl. Asian and Cyrillic character sets
  - When configuring with WinCC flexible: 32 languages can be configured incl. Asian and Cyrillic character sets and up to 5 languages can be selected online
- Extensive documentation on the SIMATIC HMI Manual Collection CD

Application

The TP 170A Touch Panels can be used in all applications in which operator control and monitoring of machines and installations is required on site – whether in production automation, process automation or building service automation. They are in use in an extensive range of sectors and applications.

With its quick response times, the TP 170A is also ideally suited to jog mode.

Design

- STN, CCFL[1)] backlit display, Bluemode
- Resistive analog Touch
- Numeric "on-screen" system keyboard for decimal, binary and hexadecimal numeric formats
- On-screen alphanumeric keyboard
- Compact design with shallow installation depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- A protective cover is available as an option for achieving the NEMA 4 degree of protection and as additional protection against fouling and scratching
- Plug-type terminals for connection of a power supply
- Interfaces for plugging the connecting cables into the PLC or configuration computer are integrated.

1) **C**old **C**athode **F**luorescence **L**amps

Function

- Input/output fields
  for displaying and changing process parameters
- Buttons
  for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics
  can be used as ICON instead of text to label function keys or buttons. They can also be used as background displays (wallpaper).
  In the configuration tool, a library is available containing extensive graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editor (such as PaintShop, Designer or CorelDraw).
- Fixed texts
  for labeling function keys, process diagrams and process values in any character size
- Bar displays
  for the graphical display of dynamic values
- Configuration languages; incl. Asian and Cyrillic fonts
- Password protection
- Message system;
  administration of status and system messages
- Mathematical functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Simple maintenance and configuration through
  - Backup and restoring the configuration, operating system and firmware on a PC using ProSave
  - Configuration can be downloaded over the process interface
  - Automatic transfer identification
  - Individual contrast setting and calibration
  - Clean screen
  - Configuration simulation directly on the configuration computer

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SIMATIC TP 170A

Function (continued)

Additional functions when configuring with WinCC flexible

- Message system
  - Bit messages
  - Freely-definable message classes (e.g. status/fault messages) for definition of acknowledgment response and display of message events
  - Message history
- Language selection
  - Online languages can be selected on the device
  - Language-dependent texts and graphics
- Permanent window expanded by template concept
  - Generation of screen templates

Configuration

Configuring is performed using the configuring software SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see HMI software/configuring software or visualization software) or using the engineering software SIMATIC WinCC flexible Compact, Standard or Advanced (see HMI software/SIMATIC WinCC flexible engineering software).

Projects generated using ProTool can be imported into WinCC flexible. With WinCC flexible, the user has in some cases access to more functions with identical hardware.

Integration

The TP 170A can be connected to Siemens SIMATIC CPUs and to non-Siemens CPUs. Projects for the TP 170A can be created both as "stand alone" and "integrated" in STEP 7.

Additional when configuring with WinCC flexible

When configuring with WinCC flexible, the TP 170A can be connected to up to 4 SIMATIC S7 PLCs.

Note:
For further information, see "System interfaces"

Technical specifications

	SIMATIC TP 170A
Display	
• Display type	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (W x H in pixels)	320 x 240
• Colors	4 shades of blue
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours
Operating mode	
• Operating options	Touch
• Touch screen	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes
Processor/HW	RISC 32 bits, 66 MHz
Operating systems	Windows CE
Memory	
• Type	Flash/RAM
• Usable memory for project data	320 KB user memory/without additional memory for options
Interfaces	TTY optional, 1 x RS232, 1 x RS422, 1 x RS485 max. 1.5 Mbit/s
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+18 V to +30 V DC
• Rated current	0.24 A
• Output	6 W

	SIMATIC TP 170A
Clock/type	
• Clock	Software clock, without battery backup
Degree of protection	
• Front	IP65, NEMA 4; (when mounted)
• Rear	IP20
Certification (some only as options)	CE, FM Class I Div. 2, UL, CSA, cULus
Mechanical components/ dimensions	
• Front panel W x H (mm)	212 x 156
• Mounting cutout/depth W x H x D (mm)	198 x 142/45 mm depth of unit
• Weight	0.7 kg
Ambient conditions	
• Max. relative humidity (in %)	85%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	-20 to +60 °C
Configuring	
• Configuration tool	ProTool
• Configuration tool	WinCC flexible

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Technical specifications (continued)

	SIMATIC TP 170A
Functionality (with WinCC flexible)	
Protocols	
• Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers
Signaling system	
• Number of messages	1000
• Discrete alarms	Yes
• Message length (in characters)	80
• Number of process values per message	8
• Message buffer	Ring buffer, 128 entries each
Process images	250
Picture elements	
• Text objects	1000 text elements
• Fields per screen	20
• Variables/screen	20
• Graphics objects	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Bar graphs
- Libraries	Yes
Variables	500
Security	
• Number of user groups	1
• Exportable passwords	Yes
Fonts	
• Keyboard fonts	US English
Languages	
• Online languages	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Fonts	Tahoma, ideographic languages, all freely scalable
Transfer under ProTool (upload/download)	
• Transfer of the configuration	MPI/PROFIBUS DP, serial (automatic transfer recognition)

	SIMATIC TP 170A
Functionality (under ProTool)	
• Password protection (number of levels)	2
Protocols	
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers
Signaling system	
• Status messages	1000
• System messages	Yes
• Message length (lines x characters)	1 x 70
• Number of process values in messages	8
Process images	50
Picture elements	
• Text objects	1000 text elements
• Number	1000
• Fields per screen	20
• Variables per screen	20
• Graphics objects	Bit maps, icons, background pictures
• Dynamic objects	Bar graphs
- Number per project	250
- Number of bar graphs/project	250
- Libraries	Yes
Variables	500
Fonts	
• Language (keyboard fonts)	US English
Languages	
• Online languages	1
• Project languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character set	Tahoma, ideographic languages, all freely scalable
Transfer of the configuration	MPI/PROFIBUS DP (if available), serial (automatic transfer recognition)

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SIMATIC TP 170A

Ordering data		Order No.
SIMATIC TP 170A Touch Panel with 5.7" STN display, blue mode (4 levels), incl. mounting accessories	B	**6AV6 545-0BA15-2AX0**
Configuring		
• with SIMATIC ProTool/Lite, ProTool or ProTool/Pro		See Section 4
• with SIMATIC WinCC flexible		See Section 4
Configuration set Consisting of: Configuration or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian and Spanish), RS 232 cable (5 m), MPI cable (5 m)		
• With SIMATIC WinCC flexible Compact engineering software	D	**6AV6 621-0AA01-0AA0**
• With SIMATIC ProTool/Lite configuration software		**6AV6 573-1FA06-0DX0**
Documentation (to be ordered separately)		
Operating Instructions TP 170micro/TP 170A/TP 170B/ OP 170B (WinCC flexible)		
• German		**6AV6 691-1DB01-0AA0**
• English		**6AV6 691-1DB01-0AB0**
• French		**6AV6 691-1DB01-0AC0**
• Italian		**6AV6 691-1DB01-0AD0**
• Spanish		**6AV6 691-1DB01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
• French		**6AV6 591-1DC11-2AC0**
• Italian		**6AV6 591-1DC11-2AD0**
• Spanish		**6AV6 591-1DC11-2AE0**
TP 170/OP 170B Manual (ProTool)		
• German		**6AV6 591-1DC11-2AA0**
• English		**6AV6 591-1DC11-2AB0**
• French		**6AV6 591-1DC11-2AC0**
• Italian		**6AV6 591-1DC11-2AD0**
• Spanish		**6AV6 591-1DC11-2AE0**

		Order No.
Documentation (to be ordered separately) (continued)		
ProTool User Manual for configuring Windows-based systems		
• German		**6AV6 594-1MA06-1AA0**
• English		**6AV6 594-1MA06-1AB0**
• French		**6AV6 594-1MA06-1AC0**
• Italian		**6AV6 594-1MA06-1AD0**
• Spanish		**6AV6 594-1MA06-1AE0**
User Manual Communication for Windows-Based Systems (ProTool)		
• German		**6AV6 596-1MA06-0AA0**
• English		**6AV6 596-1MA06-0AB0**
• French		**6AV6 596-1MA06-0AC0**
• Italian		**6AV6 596-1MA06-0AD0**
• Spanish		**6AV6 596-1MA06-0AE0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories for supplementary ordering		
Cover foil (pack of 10)		**6AV6 574-1AD00-4AX0**
Protective cover (2 sets)		**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • 2 sets of labeling strips (for OPs) • 7 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 574-1AA00-4AX0**
RS 232 cable (5 m)		**6ES7 901-1BF00-0XA0**
PROFIBUS connecting cable 830-1T For connection of data terminal, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
System interfaces		See page 2/169
Connecting cables		See page 2/180

B) Subject to export regulations AL: N and ECCN: 5D002ENC3
C) Subject to export regulations AL: N and ECCN: EAR99S
D) Subject to export regulations AL: N and ECCN: 5D992B1

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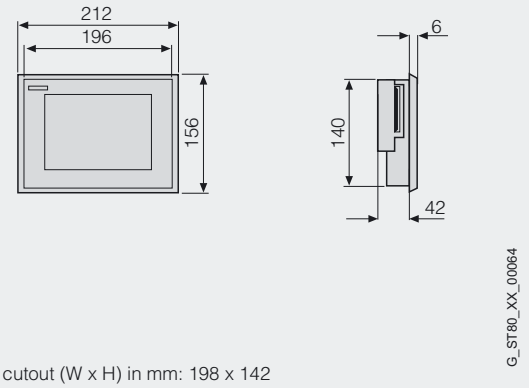
Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 198 x 142

More information

For further information, visit our website at

http://www.siemens.com/panels

Note

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

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SIMATIC TP 170B

Overview

- Touch panel for operating and monitoring machines and plants
- Universal unit for first-time users in the category of touch panels with graphics capability with extensive functionality
- Pixel graphics STN display Bluemode/color with touch screen (analog/resistive)
- Interfaces for communication with Siemens SIMATIC S7 PLCs (e.g. MPI, PROFIBUS DP) are on board
- S5 PLCs and non-Siemens PLCs can be connected through easy-to-use drivers or converters

Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Reduction of service and commissioning costs through:
  - Backup/restoration via a process interface or optionally via a CompactFlash card
  - Remote downloading of the configuration with automatic transfer recognition even via WAN (Wide Area Network) using TeleService adapter
  - Maintenance-free design (no battery) and long service life of the backlighting
- Can be used all over the world:
  - 32 offline languages can be configured (incl. Asian and Cyrillic character sets)
  - Online language can be selected directly on the device
- Graphics library available with off-the-shelf picture objects
- Standard hardware and software interfaces for increasing flexibility:
  - CompactFlash card, used for recipe data records and for backup of configuration/system data
- Integrated printer port
- Extensive documentation on the SIMATIC HMI Manual Collection CD

Application

The TP 170B Touch Panels can be used in all applications in which operator control and monitoring of machines and installations is required on site – whether in production automation, process automation or building service automation. They are in use in an extensive range of sectors and applications.

Design

- STN, CCFL[1)]-backlit display, Bluemode or color
- Resistive analog Touch
- Numeric "on-screen" system keyboard for decimal, binary and hexadecimal numeric formats
- On-screen alpha keyboard (English font)
- Compact design with shallow installation depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- A protective cover is available as an option for achieving the NEMA 4 degree of protection and as additional protection against fouling and scratching
- Plug-type terminals for connection of a power supply
- Interfaces for plugging the connecting cables into the PLC, printer or configuration computer are integrated.
- Slot for standard Compact Flash Card

1) **C**old **C**athode **F**luorescence **L**amps

Function

- Input/output fields
  for displaying and changing process parameters
- Buttons
  for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics
  can be used as icons instead of text to "label" function keys or buttons. They can also be used as background displays (wallpaper).
  In the configuration tool, a library is available containing extensive graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Vector graphics;
  simple geometric basic forms (e.g., lines, circles and rectangles) can be created direct in the configuring tool
- Predefined texts
  for labeling function keys, process images and process values in any character size
- Curve functions and bars
  are used for the display of dynamic values in graphics-based format
- Display selection from the PLC
  supports operator prompting from the PLC
- Language selection;
  online languages can be selected directly on the device
- Password protection
- Signaling system;
  administration of status, fault and system messages.
- Recipe management
  - With additional data storage (on CF card)
  - Online/offline processing on the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools such as Excel and Access is possible

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Function (continued)

- Help texts
  for process images, messages and variables
- Arithmetic functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Timer
  for cyclic function processing
- Print;
  hard copy and messages (see "Recommended printers")
- Dynamic positioning of objects and dynamic showing/hiding of objects
- Permanent window;
  Fixed area of screen for outputting non-screen-specific information (e.g., important process values, date and time)
- Simple maintenance and configuration thanks to:
  - Backup and restoration of the configuration, operating system, data records and firmware on the optional CompactFlash card
  - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
  - Configuration download/upload possible via process interface
  - Automatic transfer identification
  - Individual contrast setting and calibration
  - Clean screen
  - Configuration simulation directly on the configuration computer
- Signaling system; discrete alarms with message history (not battery-backed)

Additional functions when configuring with WinCC flexible

- Signaling system
  - Analog messages (limit value messages) as well as the Alarm S message frame procedure for SIMATIC S7 and SIMOTION
  - Freely definable message classes (e.g., status/fault messages) for definition of acknowledgment response and display of message events
- Language selection:
  - Language-dependent texts and graphics
- Permanent window enhanced with template concept;
  - Creation of a screen template
- User administration (security)
  - User-oriented access protection according to requirements of specific sectors
  - Authentication with user ID and password
  - User-group-specific rights
- Under some circumstances larger volume/function limits are possible with the same hardware than under ProTool

Configuring

Configuration is performed using the SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration software (see HMI software/configuration software or visualization software) or with the SIMATIC WinCC flexible Compact, Standard or Advanced engineering software (see HMI software/engineering software SIMATIC WinCC flexible).

Projects created with ProTool can be transferred to WinCC flexible. Under some circumstances WinCC flexible can provide the user with access to more functions without the need for additional or modified hardware.

Integration

The TP 170B can be connected to SIMATIC CPUs from Siemens and to non-Siemens CPUs.

Projects for a TP 170B can be created "stand-alone“ as well as "integrated" in STEP7.

Additionally when configuring with WinCC flexible

- SINUMERIK
  (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; the "SINUMERIK HMI engineering package WinCC flexible" is additionally necessary for configuration; for further information, see Catalog NC 60)

Note:
For further information, see "System interfaces"

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SIMATIC TP 170B

Technical specifications

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Display		
• Display type	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)
• Size	5.7"	5.7"
• Resolution (W x H in pixels)	320 x 240	320 x 240
• Colors	4 shades of blue	16 colors
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours	approx. 50,000 hours
Operating mode		
• Operating options	Touch	Touch
• Touch screen	Analog, resistive	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes
Processor/HW	RISC 32 bits, 66 MHz	RISC 32 bits, 66 MHz
Operating systems	Windows CE	Windows CE
Memory		
• Type	Flash/RAM	Flash/RAM
• Usable memory for project data	768 KB user memory/without additional memory for options	768 KB user memory/without additional memory for options
Interfaces (some only as options)		
• Interfaces	TTY optional, 2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s	TTY optional, 2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• CF card slot	1 x CF card slot	1 x CF card slot
Supply voltage		
• Supply voltage	24 V DC	24 V DC
• Permissible range	+18 V to +30 V DC	+18 V to +30 V DC
• Rated current	0.25 A	0.25 A
• Output	6 W	7 W

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Clock	Software clock, without battery backup	Software clock, without battery backup
Degree of protection		
• Front	IP65, NEMA 4; (when mounted)	IP65, NEMA 4; (when mounted)
• Rear	IP20	IP20
Certification (some only as options)	CE, FM Class I Div. 2, UL, CSA	CE, FM Class I Div. 2, UL, CSA
Mechanical components/ dimensions		
• Front panel W x H (mm)	212 x 156	212 x 156
• Mounting cutout/depth W x H x D (mm)	198 x 142/ 45 mm depth of unit	198 x 142/ 45 mm depth of unit
• Weight	0.7 kg	0.7 kg
Ambient conditions		
• Max. relative humidity (in %)	85%	85%
• Mounting position	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°
• Temperature		
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C	0 to +40 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C
Peripherals/applications/options		
• I/O	Printer	Printer
• Applications/options (with ProTool)	ThinClient	None
Configuring		
• Configuration tool	ProTool	ProTool
• Configuration tool	WinCC flexible	WinCC flexible

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Technical specifications (continued)

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Functionality (with WinCC flexible)		
• Scheduler	Yes	Yes
• Help system	Yes	Yes
Protocols		
• Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
• Number of messages	2000	2000
• Discrete alarms	Yes	Yes
• Analog messages	Yes	Yes
• Message length (in characters)	80	80
• Number of process values per message	8	8
• Acknowledgement groups	99	99
• Message buffer	Ring buffer, 128 entries each	Ring buffer, 128 entries each
Recipes		
• Recipes	100	100
• Data records per recipe	200	200
• Entries/data record	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Process images	100	100
Picture elements		
• Text objects	2000 text elements	2000 text elements
• Graphics objects	Bitmaps, icons, icon (filling the screen)	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
- Number of bar graphs per project	500	500
- Number of curve diagrams per project	50	50

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Functionality (with WinCC flexible) (continued)		
Text lists	300	300
Graphics lists	100	100
Libraries	Yes	Yes
Variables	1000	1000
Security		
• Number of user groups	10	10
• Exportable passwords	Yes	Yes
Logging/printer driver		
• Printing/logging	Messages, report/log, color print	Messages, report/log, color print
• Printer driver	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Keyboard fonts	US English	US English
Languages		
• Online languages	5	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Fonts	Tahoma, ideographic languages, all freely scalable	Tahoma, ideographic languages, all freely scalable
Data carrier support (may only be an option)		
• CF card	Yes	Yes
• Applications/options (with WinCC flexible)	ProAgent, Internet Explorer	ProAgent, Internet Explorer, ThinClient
Expansion capability/openness		
• OPP	Yes	Yes
Transfer under ProTool (upload/download)		
• Transfer of the configuration	MPI/PROFIBUS DP, serial (automatic transfer recognition)	MPI/PROFIBUS DP, serial (automatic transfer recognition)

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SIMATIC TP 170B

Technical specifications (continued)

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Functionality (under ProTool)		
• Timer	Yes	Yes
• Password protection (number of levels)	9	9
• Help system	Yes	Yes
Protocols		
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
• Status messages	1000	1000
• Alarm messages	1000	1000
• System messages	Yes	Yes
• Message length (lines x characters)	1 x 70	1 x 70
• Number of process values in messages	8	8
• Message buffer	Ring buffer, 128 entries each	Ring buffer, 128 entries each
Recipes		
• Recipes	100	100
• Data records per recipe	200	200
• Entries/data record	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Number		
• Process images	100	100
Picture elements		
• Text objects	2000 text elements	2000 text elements
• Number	2000	2000
• Fields per screen	0	0
• Variables per screen	50	50
• Graphics objects	Bitmaps, icons, background pictures, vector graphics	Bitmaps, icons, background pictures, vector graphics
• Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
- Number per project	500	500
- Number of bar graphs/project	500	500

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Functionality (under ProTool) (continued)		
Lists		
• Text lists/project	300	300
• Graphics lists/project	100	100
• Libraries	Yes	Yes
• Variables	1000	1000
Logging/printer driver		
• Print functions	Messages, color print, hard copy	Messages, color print, hard copy
• Drivers	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Language (keyboard fonts)	US English	US English
Languages		
• Online languages	5	5
• Project languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character set	Tahoma, ideographic languages, all freely scalable	Tahoma, ideographic languages, all freely scalable
Data carrier support (may only be available as an option with ProTool)		
• PC card	No	No
• CF card	Yes	Yes
• MMC card	No	No

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Ordering data		Order No.
SIMATIC TP 170B		
Touch Panel with 5.7" STN display		
• Blue mode (4 levels)	B	**6AV6 545-0BB15-2AX0**
• Color (16 colors)	B	**6AV6 545-0BC15-2AX0**
incl. mounting accessories		
Configuring		
• with SIMATIC ProTool/Lite, ProTool or ProTool/Pro		See Section 4
• with SIMATIC WinCC flexible		See Section 4
Configuration set		
Consisting of: Configuration or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian and Spanish), RS 232 cable (5 m), MPI cable (5 m)		
• With SIMATIC ProTool/Lite configuration software		**6AV6 573-1FA06-0DX0**
• With SIMATIC WinCC flexible Compact engineering software	D	**6AV6 621-0AA01-0AA0**
Documentation (to be ordered separately)		
Operating Instructions TP 170micro/TP 170A/TP 170B/ OP 170B (WinCC flexible)		
• German		**6AV6 691-1DB01-0AA0**
• English		**6AV6 691-1DB01-0AB0**
• French		**6AV6 691-1DB01-0AC0**
• Italian		**6AV6 691-1DB01-0AD0**
• Spanish		**6AV6 691-1DB01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
TP 170/OP 170B Manual (ProTool)		
• German		**6AV6 591-1DC11-2AA0**
• English		**6AV6 591-1DC11-2AB0**
• French		**6AV6 591-1DC11-2AC0**
• Italian		**6AV6 591-1DC11-2AD0**
• Spanish		**6AV6 591-1DC11-2AE0**
ProTool User Manual for configuring Windows-based systems		
• German		**6AV6 594-1MA06-1AA0**
• English		**6AV6 594-1MA06-1AB0**
• French		**6AV6 594-1MA06-1AC0**
• Italian		**6AV6 594-1MA06-1AD0**
• Spanish		**6AV6 594-1MA06-1AE0**

		Order No.
Documentation (to be ordered separately) (continued)		
User Manual Communication for Windows-Based Systems (ProTool)		
• German		**6AV6 596-1MA06-0AA0**
• English		**6AV6 596-1MA06-0AB0**
• French		**6AV6 596-1MA06-0AC0**
• Italian		**6AV6 596-1MA06-0AD0**
• Spanish		**6AV6 596-1MA06-0AE0**
SIMATIC HMI Manual Collection	C	**6AV6 691-1SA01-0AX0**
Electronic documentation, on CD-ROM		
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
Accessories		
CF cards		
CF card, 128 MB D)	A	**6AV6 574-2AC00-2AA0**
Accessories for supplementary ordering		
Cover foil (pack of 10)		**6AV6 574-1AD00-4AX0**
Protective cover (2 sets)		**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • 2 sets of labeling strips (for OPs) • 7 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 574-1AA00-4AX0**
TTY-RS 232 converter for connection with S5 CPUs, length 3.2 m; Canon 15-pin – 25-pin		**6ES5 734-1BD20**
RS 232 cable (5 m)		**6ES7 901-1BF00-0XA0**
PROFIBUS connecting cable 830-1T For connection of data terminal, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
90° angle adapter, 9-pin for RS422/485		**6AV6 671-8XD00-0AX0**
System interfaces		See page 2/169
Connecting cables		See page 2/180

A) Subject to export regulations AL: N and ECCN: EAR99H
B) Subject to export regulations AL: N and ECCN: 5D002ENC3
C) Subject to export regulations AL: N and ECCN: EAR99S
D) Subject to export regulations AL: N and ECCN: 5D992B1

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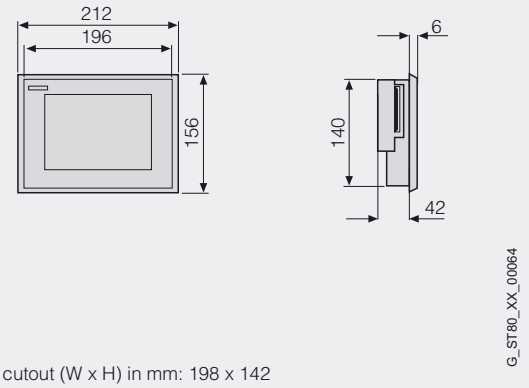
SIMATIC TP 170B

Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 198 x 142

More information

For further information, visit our website at

http://www.siemens.com/panels

Note

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

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Overview

- Touch panel for operator control and monitoring of small machines and plants
- Low-cost starter device in the touch panel class with graphical capability complete with all the basic functions required for simple tasks
- Pixel graphics 5.7" STN touch screen (analog/resistive), Bluemode (4 levels)
- All interfaces (e.g. MPI, PROFIBUS DP) are on board
- SIMATIC TP 177A is the redesigned TP 170A Touch Panel

Benefits

- Can even be used where installation space is restricted thanks to portrait configuration
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Reduces the service and start-up costs due to:
  - Remote downloading of configuration with automatic transfer recognition also over WAN (Wide Area Network)
  - Maintenance-free design (no batteries) and the long service life of the backlighting
- Graphics library is available complete with ready-to-use display objects
- Can be used worldwide:
  - 32 languages can be configured (including Asiatic and Cyrillic character sets)
  - Up to 5 languages are selectable online
  - Language-dependent texts and graphics

Application

The TP 177A Touch Panels can be used wherever direct operator control and monitoring of small machines and installations is required locally – whether in production automation, process automation or building automation. They are in use in an extensive range of sectors and applications.

With its quick response times, the TP 177A is also ideally suited to jog mode.

Compatible to TP 170A

- Installation cutout identical to TP 170A
- The TP 170A configurations can be loaded from ProTool/Lite, ProTool and ProTool/Pro
- Migration manual with descriptions of the main differences over TP 170A or ProTool

Design

- 5.7" STN, CCFL[1)] backlit display, Bluemode (4 levels)
- Resistive analog Touch
- Numeric system keyboard for decimal, binary and hexadecimal number formats
- On-screen alphanumeric keyboard
- Compact design with small installation depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- Plug-type terminals for connection of a 24 V DC power supply
- RS 485 interface for process connections (MPI, PROFIBUS DP to 1.5 Mbit/s) and for configuration download

1) **C**old **C**athode **F**luorescence **L**amps

Function

- Input/output fields
  for displaying and changing process parameters
- Buttons
  for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics
  can be used as icons instead of text to "label" function keys or buttons. They can also be used as background displays (wallpaper).
  In the configuration tool, a library is available containing extensive graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Vector graphics
  Simple geometric basic forms (line, circle and rectangle) can be created direct in the configuring tool
- Predefined
  for labeling function keys, process images and process values in different font sizes
- Bars
  for the graphical display of dynamic values
- Language selection:
  - 5 online languages, 32 configuration languages incl. Asian and Cyrillic character sets
  - Language-dependent texts and graphics
- User administration (security) according to the requirements of the various sectors
  - Authentication with user ID and password
  - User-group-specific rights
- Signaling system
  - Discrete alarms
  - Freely-definable message classes (e.g., status/fault messages) for definition of acknowledgment response and display of message events
  - Message history

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SIMATIC TP 177A

Function (continued)

- Help texts
  for process images, messages and variables
- Arithmetic functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Scheduler for global function execution
- Template concept
  Creation of picture templates (picture elements configured in the template appear in every image)
- Simple maintenance and configuration thanks to:
  - Backup and restoration of configuration, operating system and firmware on a PC using ProSave
  - Configuration download via MPI/PROFIBUS DP and serially via RS485
  - Automatic transfer identification
  - Individual contrast setting and calibration
  - Clean screen
  - No batteries are necessary

Configuring

Configuration is carried out using the SIMATIC WinCC flexible Compact, Standard or Advanced engineering software (see HMI software/SIMATIC WinCC flexible engineering software), version 2004 SP1 and higher. An HSP (Hardware Support Package) is required for this version.
The device is integrated as standard in WinCC flexible 2005 and higher and **no HSP** is required in this case.

The HSP for WinCC flexible 2004 SP1 can be downloaded free of charge via the following link:
http://www4.ad.siemens.de/WW/view/de/19241467

or alternatively via the following shortcut:

http://www.siemens.de/wincc-flexible-hsp

Projects created with ProTool can be transferred to WinCC flexible.

Integration

The TP 177A can be connected to:

- SIMATIC S7-200/-300-400
- SIMATIC WinAC Software/Slot PLC

Note:
For further information, see "System interfaces"

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Technical specifications

	SIMATIC TP 177A
Display	
• Display type	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (W x H in pixels)	320 x 240
• Colors	4 shades of blue
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours
Operating mode	
• Operating options	Touch
• Touch screen	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes
Processor/HW	N/A
Memory	
• Type	Flash/RAM
• Usable memory for project data	512 KB user memory/without additional memory for options
Interfaces	1 x RS422, 1 x RS485 max. 1.5 Mbit/s
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+20.4 to +28.8 V DC
• Output	6 W
Clock	Software clock, without battery backup
Degree of protection	
• Front	IP65, NEMA 4, NEMA 12; (when mounted)
• Rear	IP20
Certification (some only as options)	CE, GL, ABS, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, hazardous zone 2/22, C-TICK
Mechanical components/ dimensions	
• Front panel W x H (mm)	212 x 156
• Mounting cutout/depth W x H x D (mm)	198 x 142/45 mm depth of unit
• Weight	0.75 kg
Ambient conditions	
• Max. relative humidity (in %)	85%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	-20 to +60 °C
Configuring	
• Configuration tool	WinCC flexible

	SIMATIC TP 177A
Functionality (with WinCC flexible)	
• Help system	Yes
Protocols	
• Interface to control (may only be an option)	S7-200, S7-300/400Win AC
Signaling system	
• Number of messages	1000
• Discrete alarms	Yes
• Analog messages	No
• Message length (in characters)	80
• Number of process values per message	8
• Message buffer	Ring buffer, 256 entries each
Process images	250
Picture elements	
• Text objects	1000 text elements
• Fields per screen	30
• Variables/screen	30
• Graphics objects	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Bar graphs
Text lists	300
Graphics lists	0
Libraries	Yes
Variables	250
Security	
• Number of user groups	50
• Number of access rights	32
• Exportable passwords	Yes
Languages	
• Online languages	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Fonts	WinCC flexible standard, ideographic languages
Transfer under ProTool (upload/download)	
• Transfer of the configuration	MPI/PROFIBUS DP, serial (automatic transfer recognition)

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SIMATIC TP 177A

Ordering data		Order No.
SIMATIC TP 177A Touch Panel with 5.7" STN display, blue mode (4 levels), incl. mounting accessories	B	**6AV6 642-0AA11-0AX0**
TP 177A starter kit Consisting of: • Touch Panel TP 177A • SIMATIC WinCC flexible Compact engineering software • SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian, Spanish), comprising: all currently available user manuals, manuals and communication manuals for SIMATIC HMI • MPI cable (5 m) (for download and test purposes) • PC/PPI Multimaster cable • Software Update Service for 1 year	B	**6AV6 651-2AA01-0AA0**
Configuring		
• with SIMATIC WinCC flexible		See Section 4
Documentation (to be ordered separately)		
Operating Instructions for TP 177A, TP 177B, OP 177B		
• German		**6AV6 691-1DG01-0AA1**
• English		**6AV6 691-1DG01-0AB1**
• French		**6AV6 691-1DG01-0AC1**
• Italian		**6AV6 691-1DG01-0AD1**
• Spanish		**6AV6 691-1DG01-0AE1**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**

		Order No.
Accessories for supplementary ordering		
Cover foil (pack of 10)		**6AV6 671-2XC00-0AX0**
Protective cover		**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • Mounting clamps • Plug-in terminal block (twin block)		**6AV6 671-2XA00-0AX0**
PROFIBUS connecting cable 830-1T For connection of data terminal, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
90° angle adapter **1 x 90° angle adapter, 9-pin for RS485/422 interface**	A	**6AV6 671-8XD00-0AX0**
PC/PPI Multimaster cable For connecting the S7-200 to the serial PC/OP interface, and for image booting of the panel	A	**6ES7 901-3CB30-0XA0**
System interfaces		See page 2/169
Connecting cables		See page 2/180

A) Subject to export regulations AL: N and ECCN: EAR99H
B) Subject to export regulations AL: N and ECCN: 5D002ENC3
C) Subject to export regulations AL: N and ECCN: EAR99S

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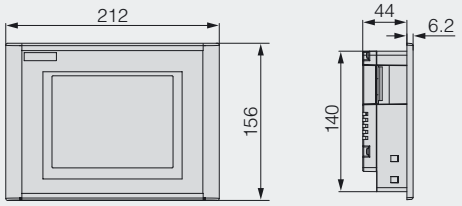
Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 197+1 x 141+1

More information

For further information, visit our website at

http://www.siemens.com/panels

Note

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

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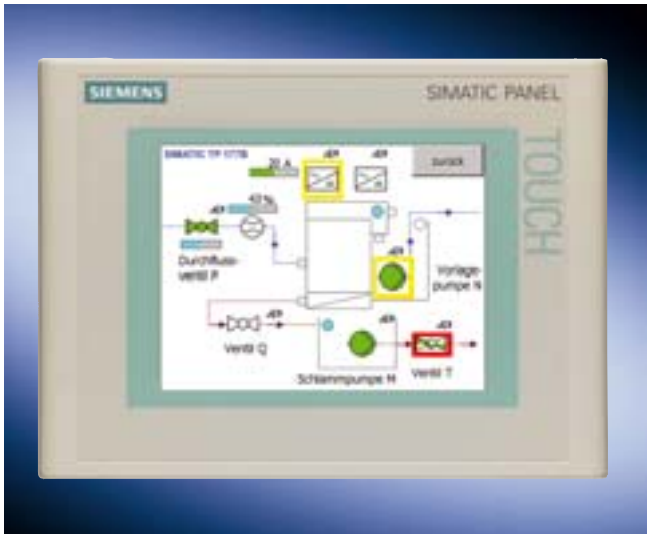
SIMATIC TP 177B

Overview



- Touch Panel with comprehensive functions for operator control and monitoring of machines and plants
- Pixel-graphics STN blue-mode/color display with analog touch screen
- Interfaces for communication with Siemens SIMATIC S7 (e.g., MPI, PROFIBUS DP) are on-board
- PROFINET interface is already on-board in the color version
- Drivers are also available for non-Siemens PLCs

Benefits

- Reduction of service and commissioning costs through:
  - Backup/restore via a process interface or optionally via a Multi Media Card.
  - Image and configuration download via all device interfaces
  - Maintenance-free design and long service life of the backlighting. The data in the message buffer are retained even when the panel is disconnected from the supply, without battery backup
- Can be used all over the world:
  - 32 project languages can be configured (incl. Asian and Cyrillic character sets)
  - Online language can be selected directly on the device
- Graphics library available with off-the-shelf picture objects
- Standard interfaces for increasing the flexibility:
  - external Multi Media Card, used for recipe data sets and for backup of configuration/system data
- Integrated USB interface for connecting, for example, standard printers
- Simple engineering supported with comprehensive documentation on the SIMATIC HMI Manual Collection CD
- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs

Application

Thanks to their practical functions and large user memory, TP 177B Touch Panels can be used wherever operator control and monitoring of machines and plants is necessary on site – whether in production automation, process automation or building-services automation. The TP 177B panels are now available with a 4-color blue-mode display or a 256-color STN display. The color variant complete with an integral PROFINET interface can be implemented with even greater flexibility. A USB port is standard on both model types. A further highlight is the non-volatile message buffer included as standard that stores messages permanently without battery backup.

Design

- 256 colors with color display or 4 blue-mode monochrome STN display
- CCFL [1)] Backlighting with long service life
- Analog resistive touch screen
- Numeric and alphanumeric on-screen keyboard
- High performance thanks to Risk processor and 2 MB user memory, plus additional integrated recipe memory
- Data in the message buffer are retained even when panel is disconnected from the power supply, without batteries
- MPI, PROFIBUS DP interfaces (up to 12 Mbaud) as well as USB 1.1 (max. 100 mA) on-board
- PROFINET interface with color variant already on-board
- Integral USB interface
- Can be configured using SIMATIC WinCC flexible 2005 Compact and higher
- Complete functionality for demanding tasks
- Comprehensive Reichert graphics library
- 32 languages (e.g., Cyrillic, traditional Chinese, simplified Chinese) and online switching between up to 5 languages
- Multi Media Card slot, can be used for standard MMCs (for backing up recipe data sets, the configuration and system data)
- Remote downloading of the configuration via all interfaces with automatic transfer recognition
- SINUMERIK, Sm@rt Access and Sm@rt Service options can be used
- Service-friendly thanks to maintenance-free design and long service life of the backlighting display

1) **C**old **C**athode **F**luorescence **L**amps

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Function

- Permanent window and template concept for creating screen templates
- Input/output fields
  for visualizing and editing process parameters
- Configurable buttons
  with up to 16 functions are also used to directly trigger functions and actions
- Indicator light
  for machine and plant status indication
- Predefined texts
  for labeling function keys, process images and process values in any character size
- Help texts
  for process images, messages and variables
- Vector graphics, graphics
  can be used as icons instead of text for "labeling" buttons. They can also be used as full-screen background pictures. In the configuration tool, a library is available containing extensive graphics and a wide variety of objects. All editors with an OLE interface (e.g., PaintShop, Designer or CorelDraw) can be used as graphics editors.
- Curve functions and bars
  are used for the display of dynamic values in graphics-based format
- Dynamic positioning of objects and dynamic showing/hiding of objects
- Arithmetic functions, limit value monitoring
  for reliable process control with inputs and outputs
- Online language selection (5 selectable languages), incl. Asian and Cyrillic languages
  This also applies to language-specific graphics
- Timer
  for cyclic function processing
- Password protection (security)
  User management – Authentication by means of user ID and password plus privileges specific to user groups, which is an integral part of SIMATIC
- Signaling system
  Freely definable message classes (acknowledgement behavior and display can be configured) Administration of status, fault and system messages. The message history is retained even if the device is switched off.
  Analog alarms (limit value messages) in addition to bit messages
- Recipe management:
  - With additional data storage (on ext. storage medium)
  - Online/offline processing on the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools such as Excel and Access is possible
- Multi Media Card slot
  for external standard data carrier, can be used for backup/restoration or for transporting recipe data records
- User-friendly maintenance and configuration thanks to:
  - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
  - Option to download/upload the configuration via all device interfaces (with automatic transfer detection)
  - Individual contrast setting and calibration
  - Clean screen function to support reliable cleaning of the touch panel in service
  - Configuration simulation directly on the configuration computer

Configuring

The equipment is configured using the innovative engineering tool SIMATIC WinCC flexible 2005 (Compact and above). SIMATIC WinCC flexible is the logical further development of the field-proven ProTool family. Projects generated using ProTool can be easily migrated to WinCC. When OP17 projects are implemented, the project engineer must make certain changes following conversion as a result of the innovated display technology. Support is however provided by WinCC flexible. If WinCC flexible is started directly from SIMATIC Manager, data in STEP 7 can be accessed directly at the click of a mouse button when the panel is configured. Duplicated data input and data management is, therefore, avoided.

Additional options

- SINUMERIK
  Optionally with "SINUMERIK HMI copy license WinCC flexible CE". The SINUMERIK HMI engineering WinCC flexible package is also required for configuration. For further information see Catalog NC 60.
- Sm@rt Service
  Remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
- Sm@rt Access
  Communication between HMI systems based on TCP/IP networks. Remote access to recipe data sets, passwords and information specific to the HMI system, and much more.

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SIMATIC TP 177B

Technical specifications

	SIMATIC TP 177B Bluemode (4 levels)	SIMATIC TP 177B Color (256 colors)
Display		
• Display type	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)
• Size	5.7"	5.7"
• Resolution (W x H in pixels)	320 x 240	320 x 240
• Colors	4 shades of blue	256 colors
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours	approx. 50,000 hours
Operating mode		
• Operating options	Touch	Touch
• Touch screen	Analog, resistive	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes
• External mouse/keyboard/bar-code reader	USB/USB/-	USB/USB/-
Processor/HW	RISC 32 bits, 66 MHz	RISC 32 bits, 66 MHz
Operating systems	Windows CE	Windows CE
Memory		
• Type	Flash/RAM	Flash/RAM
• Usable memory for project data	2000 KB user memory/without additional memory for options	2000 KB user memory/without additional memory for options
Interfaces (some only as options)		
• Interfaces	RS232 optional, 1 x RS422, 1 x RS485 max. 12 Mbit/s	RS232 optional, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• USB (universal serial bus)	1 x USB	1 x USB
• Ethernet	No	1 x Ethernet (RJ45)
• SD/MMC SLOT	1 x SD/MMC slot	1 x SD/MMC slot
Supply voltage		
• Supply voltage	24 V DC	24 V DC
• Permissible range	-15% to +20%	-15% to +20%
Clock	Software clock, without battery backup	Software clock, without battery backup

	SIMATIC TP 177B Bluemode (4 levels)	SIMATIC TP 177B Color (256 colors)
Degree of protection		
• Front	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)
• Rear	IP20	IP20
Certification (some only as options)	CE, GL, ABS, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, EX zone 2/22, Gost-R, C-TICK	CE, GL, ABS, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, EX zone 2/22, Gost-R, C-TICK
Mechanical components/dimensions		
• Front panel W x H (mm)	212 x 156	212 x 156
• Mounting cutout/depth W x H x D (mm)	189 x 142/45 mm depth of unit	189 x 142/45 mm depth of unit
Ambient conditions		
• Max. relative humidity (in %)	85%	85%
• Mounting position	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°
• Temperature		
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C	0 to +40 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C
Expansions for operator-process communication (may only be an option)		
• DP direct keys (buttons as input peripherals)	S1...S164 byte or coded	4 bytes or coded
Peripherals/applications/options		
• I/O	Printer	Printer
Configuring		
• Configuration tool	WinCC flexible 2005, Compact, Standard, Advanced	WinCC flexible 2005 Advanced

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Technical specifications (continued)

	SIMATIC TP 177B Bluemode (4 levels)	SIMATIC TP 177B Color (256 colors)
Functionality (with WinCC flexible)		
• Scheduler	Yes	Yes
• Help system	Yes	Yes
• Status/Control	with SIMATIC S7	with SIMATIC S7
Protocols		
• Interface to control (may only be an option)	S7-200, S7-300/400Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers	S7-200, S7-300/400Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
• Number of messages	2000	2000
• Discrete alarms	Yes	Yes
• Analog messages	Yes	Yes
• Message length (in characters)	80	80
• Number of process values per message	8	8
• Acknowledgement groups	99	99
• Message buffer	Battery-backed ring buffer, 256 entries each	Battery-backed ring buffer, 256 entries each
Recipes		
• Recipes	100	100
• Data records per recipe	200	200
• Entries/data record	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Process images	100	100
Picture elements		
• Text objects	2000 text elements	2000 text elements
• Graphics objects	Bitmaps, icons, icon (filling the screen), vector graphics	Bitmaps, icons, icon (filling the screen), vector graphics
• Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
- Number of bar graphs per project	500	500
- Number of curve diagrams per project	50	50

	SIMATIC TP 177B Bluemode (4 levels)	SIMATIC TP 177B Color (256 colors)
Functionality (with WinCC flexible) (continued)		
Text lists	300	300
Graphics lists	100	100
Libraries	Yes	Yes
Variables	1000	1000
Filters		
• Security		
- Number of user groups	50	50
- Number of access rights	32	32
- Exportable passwords	Yes	Yes
Logging/printer driver		
• Printing/logging	Messages, report/log, color print, hardcopy	Messages, report/log, color print, hardcopy
• Printer driver	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Keyboard fonts	US English	US English
Languages		
• Online languages	5	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	Tahoma, WinCC flexible standard, ideographic languages, all freely scalable	Tahoma, WinCC flexible standard, ideographic languages, all freely scalable
Data carrier support (may only be an option)		
• MMC card	Yes	Yes
Expansion capability/openness		
• OPP	Yes	Yes
Transfer under ProTool (upload/download)		
• Transfer of the configuration	MPI/PROFIBUS DP (automatic transfer recognition)	MPI/PROFIBUS DP, Ethernet (automatic transfer recognition)

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SIMATIC TP 177B

Ordering data		Order No.
SIMATIC TP 177B Touch Panel with 5.7" STN display		
• Blue mode (4 levels)	B	**6AV6 642-0BC01-1AX0**
• Color (256 colors) incl. mounting accessories	B	**6AV6 642-0BA01-1AX0**
TP 177B starter kit Consisting of: • TP 177B with STN display, blue mode • SIMATIC WinCC flexible Compact configuring software • SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian, Spanish) • MPI cable (5 m) • Software update service for 1 year	B	**6AV6 551-2EA01-1AA0**
Configuring		
• with SIMATIC WinCC flexible		See Section 4
Configuration set Consisting of: Configuration or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian and Spanish), MPI cable (5 m)		
• with SIMATIC WinCC flexible Compact engineering software	D	**6AV6 621-0AA01-0AA0**
Documentation (to be ordered separately)		
Operating Instructions TP 177micro/TP 177A/TP 177B/ OP 1770B (WinCC flexible)		
• German		**6AV6 691-1DG01-0AA1**
• English		**6AV6 691-1DG01-0AB1**
• French		**6AV6 691-1DG01-0AC1**
• Italian		**6AV6 691-1DG01-0AD1**
• Spanish		**6AV6 691-1DG01-0AE1**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**

	Order No.
Accessories	
Accessories for supplementary ordering	
Cover foil (pack of 10)	**6AV6 671-2XC00-0AX0**
Protective cover (2 sets)	**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • 7 tensioning clamps • Plug-in terminal block (twin block)	**6AV6 671-2XA00-0AX0**
PROFIBUS connecting cable 830-1T For connection of data terminal, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m	**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)	**6GK1 500-0EA02**
IE FC RJ45 Plug 90 RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 90° cable outlet; for ET 200S; 1 pack = 1 unit	**6GK1 901-1BB20-2AA0**
IE FC RJ45 Plug 180 RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface; 1 pack = 1 unit	**6GK1 901-1BB10-2AA0**
90° angle adapter, 9-pin for RS422/485	**6AV6 671-8XD00-0AX0**
RS422-to-RS232 (V.24) converter Between TD/TP/OP and non-Siemens PLC with RS232 interface	**6AV6 671-8XJ00-0AX0**
Standard Multi Media Card	**6AV6 671-1CB00-0AX0**
System interfaces	See page 2/169
Connecting cables	See page 2/180

B) Subject to export regulations AL: N and ECCN: 5D002ENC3

C) Subject to export regulations AL: N and ECCN: EAR99S

D) Subject to export regulations AL: N and ECCN: 5D992B1

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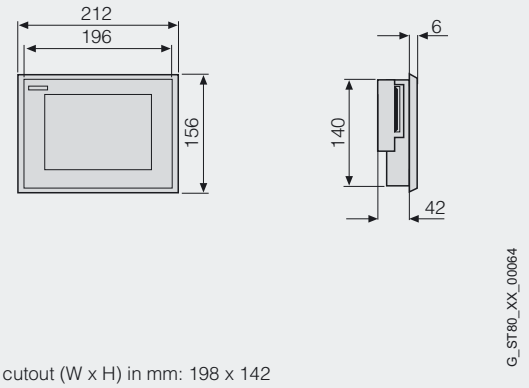
Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 198 x 142

More information

For further information, visit our website at

http://www.siemens.de/panels

Note

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

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SIMATIC OP 170B

Overview

- Operator panel for operator control and monitoring of machines and plants
- Universal unit for first-time users in the category of panels with graphics capability with extensive functionality
- Pixel-graphics 5.7" STN display, Bluemode (4 levels)
- Membrane keyboard with system keys, freely configurable and freely inscribable function keys (some with LED)
- Interfaces for communication with Siemens SIMATIC S7 PLCs (e.g. MPI, PROFIBUS DP) are on board
- S5 PLCs and non-Siemens PLCs can be connected through easy-to-use drivers or converters

Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Reduction of service and commissioning costs through:
  - Backup/restoration via a process interface or optionally via a CompactFlash card
  - Remote downloading of the configuration with automatic transfer recognition even via WAN (Wide Area Network) using TeleService adapter
  - Maintenance-free design (no battery) and long service life of the backlighting
- Can be used all over the world:
  - 32 offline languages can be configured (incl. Asian and Cyrillic character sets)
  - Online language can be selected directly on the device
- Graphics library available with off-the-shelf picture objects
- Standard hardware and software interfaces for increasing flexibility:
  - CompactFlash card, used for recipe data records and for backup of configuration/system data
- Integrated printer port
- Extensive documentation on the SIMATIC HMI Manual Collection CD

Application

The OP 170B Operator Panel can be used wherever direct operator control and monitoring of machines and installations is required locally – whether in production automation, process automation or building automation. They are in use in an extensive range of sectors and applications.

Design

- STN, CCFL[1)] backlit display, Bluemode
- System keys, freely-configurable and freely-inscribable function keys (some with LED)
- Numeric and alphanumeric membrane keyboard
- Compact design with shallow installation depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- Plug-type terminals for connection of a power supply
- Interfaces for plugging the connecting cables into the PLC, printer or configuration computer are integrated.
- Slot for standard Compact Flash Card

1) **C**old **C**athode **F**luorescence **L**amps

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Function

- Input/output fields
  for displaying and changing process parameters
- Function keys
  for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on function keys.
  The function keys can be used directly as PROFIBUS DP input peripherals.
- Buttons
  for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics
  can be used as icons instead of text to "label" function keys or buttons. They can also be used as background displays (wallpaper).
  In the configuration tool, a library is available containing extensive graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Vector graphics;
  simple geometric basic forms (e.g., lines, circles and rectangles) can be created direct in the configuring tool
- Predefined texts
  for labeling function keys, process images and process values in any character size
- Curve functions and bars
  are used for the display of dynamic values in graphics-based format
- Display selection from the PLC
  supports operator prompting from the PLC
- Language selection;
  online languages can be selected directly on the device
- Password protection
- Signaling system;
  administration of status, fault and system messages.
- Recipe management
  - With additional data storage (on CF card)
  - Online/offline processing on the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools such as Excel and Access is possible
- Help texts
  for process images, messages and variables
- Arithmetic functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Timer
  for cyclic function processing
- Print;
  hard copy and messages (see "Recommended printers")
- Dynamic positioning of objects and dynamic showing/hiding of objects
- Permanent window;
  Fixed area of screen for outputting non-screen-specific information (e.g., important process values, date and time)
- Simple maintenance and configuration thanks to:
  - Backup and restoration of the configuration, operating system, data records and firmware on the optional CF (CompactFlash) card
  - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
  - Configuration download/upload possible via process interface
  - Automatic transfer identification
  - Individual contrast settings
  - Configuration simulation directly on the configuration computer
- Signaling system; discrete alarms with message history (not battery-backed)

Additional functions when configuring with WinCC flexible

- Signaling system
  - Analog messages (limit value messages) as well as the Alarm S message frame procedure for SIMATIC S7 and SIMOTION
  - Freely definable message classes (e.g., status/fault messages) for definition of acknowledgment response and display of message events
- Language selection:
  - Language-dependent texts and graphics
- Permanent window enhanced with template concept
  - Creation of a template (screen template)
- User administration (password protection)
  - User-oriented access protection according to requirements of specific sectors
  - Authentication with user ID and password
  - User-group-specific rights
- Under some circumstances larger volume/function limits are possible with the same hardware than under ProTool

Configuring

Configuration is performed using the SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration software (see HMI software/configuration software or visualization software) or with the SIMATIC WinCC flexible Compact, Standard or Advanced engineering software (see HMI software/engineering software SIMATIC WinCC flexible).

Projects created with ProTool can be transferred to WinCC flexible. Under some circumstances WinCC flexible can provide the user with access to larger volume limits and more functions without the need for additional or modified hardware.

Integration

The OP 170B can be connected to SIMATIC CPUs from Siemens and to non-Siemens CPUs.

Projects for an OP 170B can be created "stand-alone“ as well as "integrated" in STEP7.

Additionally when configuring with WinCC flexible

- SINUMERIK
  (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; the "SINUMERIK HMI engineering package WinCC flexible" is additionally necessary for configuration; for further information, see Catalog NC 60)

Note:
For further information, see "System interfaces"

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SIMATIC OP 170B

Technical specifications

	SIMATIC OP 170B
Display	
• Display type	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (W x H in pixels)	320 x 240
• Colors	4 shades of blue
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours
Operating mode	
• Operating options	Key
• Function keys, programmable	24 function keys, 18 with LEDs
• Membrane keyboard	Yes
• System keys	35
• Touch screen	No
• Numeric/alphanumeric input	Yes/Yes
Processor/HW	RISC 32 bits, 66 MHz
Operating systems	Windows CE
Memory	
• Type	Flash/RAM
• Usable memory for project data	768 KB user memory/without additional memory for options
Interfaces (some only as options)	
• Interfaces	TTY optional, 2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• CF card slot	1 x CF card slot
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+18 to +30 V DC
• Rated current	0.25 A
• Output	6 W
Clock	Software clock, without battery backup

	SIMATIC OP 170B
Degree of protection	
• Front	IP65, NEMA 4; (when mounted)
• Rear	IP20
Certification (some only as options)	CE, FM Class I Div. 2, UL, CSA
Mechanical components/ dimensions	
• Front panel W x H (mm)	240 x 252
• Mounting cutout/depth W x H x D (mm)	229 x 241/45 mm depth of unit
• Weight	0.9 kg
Ambient conditions	
• Max. relative humidity (in %)	85%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°
• Temperatur e	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	-20 to +60 °C
Expansions for operator-process communication (may only be an option)	
• DP direct LEDs (LEDs as S7 output I/O)	F1...F8, K1...K10
• DP direct keys (buttons as input peripherals)	F1...F14, K1...K10
Peripherals/applications/options	
• I/O	Printer
• Applications/options (with ProTool)	ThinClient
Configuring	
• Configuration tool	ProTool
• Configuration tool	WinCC flexible

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Technical specifications (continued)

	SIMATIC OP 170B
Functionality (with WinCC flexible)	
• Scheduler	Yes
• Help system	Yes
Protocols	
• Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system	
• Number of messages	2000
• Discrete alarms	Yes
• Analog messages	Yes
• Message length (in characters)	80
• Number of process values per message	8
• Acknowledgement groups	99
• Message buffer	Ring buffer, 128 entries each
Recipes	
• Recipes	100
• Data records per recipe	200
• Entries/data record	200
• Recipe memory	32 KB integrated Flash, expandable
Process images	100
Picture elements	
• Text objects	2000 text elements
• Fields per screen	0
• Variables/screen	50
• Graphics objects	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Diagrams, bar graphs, hidden buttons
Text lists	300
Graphics lists	100
Libraries	Yes
Variables	1000
Security	
• Number of user groups	10
• Exportable passwords	Yes
Logging/printer driver	
• Printing/logging	Messages, report/log, color print
• Printer driver	ESC/P2, PCL3/PCL6
Fonts	
• Keyboard fonts	US English
Languages	
• Online languages	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	Tahoma, ideographic languages, all freely scalable
Data carrier support (may only be an option)	
• CF card	Yes
• Applications/options (with WinCC flexible)	ProAgent, Internet Explorer, ThinClient

	SIMATIC OP 170B
Transfer under ProTool (upload/download)	
• Transfer of the configuration	MPI/PROFIBUS DP, serial (automatic transfer recognition)
Functionality (under ProTool)	
• Timer	Yes
• Password protection (number of levels)	9
• Help system	Yes
Protocols	
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) nd other non-Siemens drivers
Signaling system	
• Status messages	1000
• Alarm messages	1000
• System messages	Yes
• Message length (lines x characters)	1 x 70
• Number of process values in messages	8
• Message buffer	Ring buffer, 128 entries each
Recipes	
• Recipes	100
• Data records per recipe	200
• Entries/data record	200
• Recipe memory	32 KB integrated Flash, expandable
Process images	100
Picture elements	
• Text objects	2000 text elements
• Number	2000
• Graphics objects	Bitmaps, icons, background pictures, vector graphics
• Dynamic objects	Diagrams, bar graphs, hidden buttons
Text lists/project	300
Graphics lists/project	100
Libraries	Ja
Variables	1.000
Logging/printer driver	
• Print functions	Messages, color print, hard copy
• Drivers	ESC/P2, PCL3/PCL6
Fonts	
• Language (keyboard fonts)	US English
Languages	
• Online languages	5
• Project languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character set	Tahoma, ideographic languages, all freely scalable
Expansion capability/openness	
• Transfer of the configuration	MPI/PROFIBUS DP (if available), serial (automatic transfer recognition)

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SIMATIC OP 170B

Ordering data		Order No.
SIMATIC OP 170B Operator Panel with 5.7" STN display, blue mode (4 levels), incl. mounting accessories	B	**6AV6 542-0BB15-2AX0**
Configuring		
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro		See Section 4
with SIMATIC WinCC flexible		See Section 4
Configuration set Consisting of: Configuration or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian and Spanish), RS 232 cable (5 m), MPI cable (5 m)		
• With SIMATIC ProTool/Lite configuration software		**6AV6 573-1FA06-0DX0**
• With SIMATIC WinCC flexible Compact engineering software	D	**6AV6 621-0AA01-0AA0**
Documentation (to be ordered separately)		
Operating Instructions TP 170micro/TP 170A/TP 170B/ OP 170B (WinCC flexible)		
• German		**6AV6 691-1DB01-0AA0**
• English		**6AV6 691-1DB01-0AB0**
• French		**6AV6 691-1DB01-0AC0**
• Italian		**6AV6 691-1DB01-0AD0**
• Spanish		**6AV6 691-1DB01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
TP 170/OP 170B Manual (ProTool)		
• German		**6AV6 591-1DC11-2AA0**
• English		**6AV6 591-1DC11-2AB0**
• French		**6AV6 591-1DC11-2AC0**
• Italian		**6AV6 591-1DC11-2AD0**
• Spanish		**6AV6 591-1DC11-2AE0**

		Order No.
ProTool User Manual for configuring Windows-based systems		
• German		**6AV6 594-1MA06-1AA0**
• English		**6AV6 594-1MA06-1AB0**
• French		**6AV6 594-1MA06-1AC0**
• Italian		**6AV6 594-1MA06-1AD0**
• Spanish		**6AV6 594-1MA06-1AE0**
Communication User Manual for Windows-based systems (ProTool)		
• German		**6AV6 596-1MA06-0AA0**
• English		**6AV6 596-1MA06-0AB0**
• French		**6AV6 596-1MA06-0AC0**
• Italian		**6AV6 596-1MA06-0AD0**
• Spanish		**6AV6 596-1MA06-0AE0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories		
Accessories for supplementary ordering		
CF cards CF card, 128 MB	A	**6AV6 574-2AC00-2AA0**
Service pack Consisting of: • Installation sealing • 7 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 574-1AA00-4AX0**
RS 232 cable (5 m)		**6ES7 901-1BF00-0XA0**
PROFIBUS connecting cable 830-1T For terminal connection, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
System interfaces		See page 2/169
Connecting cables		See page 2/180

A) Subject to export regulations AL: N and ECCN: EAR99H
B) Subject to export regulations AL: N and ECCN: 5D002ENC3
C) Subject to export regulations AL: N and ECCN: EAR99S
D) Subject to export regulations AL: N and ECCN: 5D992B1

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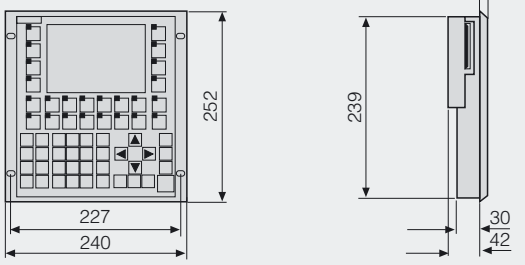
Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 229 x 241

More information

For further information, visit our website at

http://www.siemens.com/panels

Note

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

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SIMATIC OP 177B

Overview

- Touch/Key panel with comprehensive functions for operator control and monitoring of machines and plants
- Contents of message buffer are retained even when panel is disconnected, without batteries
- Pixel graphics STN display Bluemode/Color with touch screen and additional 32 function keys
- Interfaces for communication with Siemens SIMATIC S7 (e.g. MPI, PROFIBUS DP) are on board
- Ethernet is on board in the color version
- Drivers are also available for non-Siemens PLCs
- Mounting compatible with OP17

Benefits

- Reduction of service and commissioning costs through:
  - Backup/restoration via a process interface or optionally via a Multi Media Card
  - Remote downloading of the configuration with automatic transfer recognition via all device interfaces
  - Maintenance-free design (no battery) and long service life of the backlighting
  - System keys that can be assigned to any function keys and used as an alternative to or in parallel with the on-screen keyboard
- Maintenance-free message buffer
- Can be used all over the world:
  - 32 offline languages can be configured (incl. Asian and Cyrillic character sets)
  - Online language can be selected directly on the device
- Graphics library available with off-the-shelf picture objects
- Standard interfaces for increasing the flexibility:
  - External MMC, used for recipe data records and for backup of configuration/system data
- Integrated USB interface for connecting, for example, standard printers
- Mounting is compatible with OP17
- Simple engineering supported with comprehensive documentation on the SIMATIC HMI Manual Collection CD
- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs

Application

Equipped with practical functions and a large user memory, the OP 177B Operator Panels can be used wherever operator control and monitoring of machines and plants is necessary on site – whether in production automation, process automation or building services automation. The OP 177B panels are now available with a 4-color Bluemode display or a 256-color STN display. The color variant complete with an integral Ethernet interface can be implemented with even greater flexibility. A USB interface is standard for both model types. A further highlight is the non-volatile message buffer included as standard that stores messages permanently without batteries.

Design

- 256 colors with color display or 4 bluemodes with monochrome STN display
- CCFL[1)] Backlighting with long service life
- Analog resistive touch screen and membrane keyboard with 32 function keys
- Numeric and alphanumeric on-screen keyboard
- High performance with Risk processor and 2 MB user memory, plus additional integrated recipe memory
- The data in the message buffer are retained when panel is disconnected from the supply, without batteries
- MPI, PROFIBUS DP interfaces (up to 12 Mbaud) as well as USB 1.1 (max. 100 mA) are on board
- Ethernet (Profinet IO capability) with the color version
- Integral USB interface
- Can be configured using SIMATIC WinCC flexible 2005 Compact and later
- Complete functionality for demanding tasks
- Comprehensive Reichert graphics library
- 32 languages (e.g. Cyrillic, traditional Chinese, simplified Chinese) and Online switching between up to 5 languages
- Multi Media Card slot, can be used for standard MMCs (for backing up recipe data sets, the parameter settings as well as the system data)
- Remote downloading of the configuration through all interfaces with automatic transfer recognition
- SINUMERIK, Sm@rt Access and Sm@rt Service options can be used
- Service-friendly thanks to maintenance-free design and long service life of the backlighting

1) **C**old **C**athode **F**luorescence **L**amps

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Function

- Permanent window and template concept for creating screen templates
- Input/output fields
  for visualizing and editing process parameters
- Configurable buttons
  with up to 16 functions each can be used to directly trigger functions and actions
- Indicator light
  for machine and plant status indication
- Predefined texts
  for labeling function keys, process diagrams and process values in any character size
- Help texts
  for process diagrams, messages and variables
- Vector graphics, graphics
  can be used as icons instead of text for "labeling" buttons. They can also be used as background displays (wallpaper). In the configuration tool, a library is available containing extensive graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editor (such as PaintShop, Designer or CorelDraw).
- Curve functions and bars
  are used for graphical display of dynamic values
- Dynamic positioning of objects and dynamic showing/hiding of objects
- Arithmetic functions, limit value monitoring
  for reliable process control of inputs and outputs
- Online language switching between 5 selectable languages, incl. Asian and Cyrillic languages
  this also applies to language-specific graphics
- Timer
  for cyclic function processing
- Password protection (security)
  User management – Authentication by means of user ID and password plus privileges specific to user groups, which is an integral part of SIMATIC
- Message system;
  Freely-definable message classes (response to acknowledgement and presentation can be configured), management of operation, fault and system messages. Historical messages are also retained when the unit is disconnected from the power supply.
  Analog messages (limit messages) are possible in addition to bit messages.
- Recipe management
  - With additional data storage (on ext. storage medium)
  - Online/offline processing at the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools such as Excel and Access is possible
- Multi Media Card (MMC) slot
  for external standard data carrier, can be used for backup/restore or for transporting recipe data sets
- Simple maintenance and configuration through:
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Downloading/uploading of the configuration is possible over all device interfaces (with automatic transfer detection)
  - Individual contrast setting and calibration
  - Configuration simulation directly on the configuration computer

Configuration

The equipment is configured using the innovative engineering tool SIMATIC WinCC flexible 2005 (Compact and above). SIMATIC WinCC flexible represents a consistent further development of the well-proven ProTool family. Projects generated using ProTool can easily migrate to WinCC. When OP17 projects are converted, as a result of the new display technology, the project engineer must make certain changes following conversion. Support is however provided by WinCC flexible. Conversion of OP 170B projects is easy because all system commands can be entered using the on-screen keyboard. If WinCC flexible can be started directly from SIMATIC Manager, the data can be accessed directly in STEP 7 at the click of a mouse button when the panel is configured. Duplicated data input and data management is therefore avoided.

Additional options

- SINUMERIK
  optionally with "SINUMERIK HMI copy license WinCC flexible CE". The "SINUMERIK HMI engineering package WinCC flexible" is additionally necessary for configuration; For further information, see Catalog NC 60.
- Sm@rt Service
  Remote operation and monitoring of SIMATIC HMI systems over TCP/IP networks
- Sm@rt Access
  Communication between HMI systems over TCP/IP networks. Remote access to recipe data sets, passwords and information specific to the HMI system and a great deal more

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SIMATIC OP 177B

Technical specifications

	SIMATIC OP 177B Bluemode (4 levels)	SIMATIC OP 177B Color (256 colors)
Display		
• Display type	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)
• Size	5.7"	5.7"
• Resolution (W x H in pixels)	320 x 240	320 x 240
• Colors	4 shades of blue	256 colors
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours	approx. 50,000 hours
Operating mode		
• Operating options	Key and Touch	Key and Touch
• Function keys, programmable	32 function keys, 26 with LEDs	32 function keys, 26 with LEDs
• Membrane keyboard	Yes	Yes
• System keys	configurable	configurable
• Touch screen	Analog, resistive	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes
• External mouse/keyboard/ barcode reader	USB/USB/-	USB/USB/-
Processor/HW	RISC 32 bits, 66 MHz	RISC 32 bits, 66 MHz
Operating systems	Windows CE	Windows CE
Memory		
• Type	Flash/RAM	Flash/RAM
• Usable memory for project data	2000 KB user memory/without additional memory for options	2000 KB user memory/without additional memory for options
Interfaces (some only as options)		
• Interfaces	RS232 optional, 1 x RS422, 1 x RS485 max. 12 Mbit/s	RS232 optional, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• USB (universal serial bus)	1 x USB	1 x USB
• Ethernet	No	1 x Ethernet (RJ45)
• SD/MMC SLOT	1 x SD/MMC slot	1 x SD/MMC slot
Supply voltage		
• Supply voltage	24 V DC	24 V DC
• Permissible range	+18 to +30 V DC	+18 to +30 V DC

	SIMATIC OP 177B Bluemode (4 levels)	SIMATIC OP 177B Color (256 colors)
Clock	Software clock, without battery backup	Software clock, without battery backup
Degree of protection		
• Front	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)
• Rear	IP20	IP20
Certification (some only as options)	CE, GL Class NK, ABS, BV, DNV, LRS, RINA, FM Class I Div. 2, UL, cULus, EX-Zone 2/22, Gost-R, C-TICK	CE, GL, ABS, BV, DNV, LRS, RINA, FM Class I Div. 2, UL, cULus, EX-Zone 2/22, Gost-R, C-TICK
Mechanical components/ dimensions		
• Front panel W x H (mm)	240 x 208.5	240 x 208.5
• Mounting cutout/depth W x H x D (mm)	228 x 195/ 45 mm depth of unit	228 x 195/ 45 mm depth of unit
Ambient conditions		
• Max. relative humidity (in %)	85%	85%
• Mounting position	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°
• Temperature		
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C	0 to +40 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C
Expansions for operator-process communication (may only be an option)		
• DP direct LEDs (LEDs as S7 output I/O)	F1...F26	F1...F26
• DP direct keys (buttons as input peripherals)	F1...F32, K1...K10	F1...F32, K1...K10
Peripherals/applications/options		
• I/O	Printer	Printer
Configuring		
• Configuration tool	WinCC flexible	WinCC flexible

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Technical specifications (continued)

	SIMATIC OP 177B Bluemode (4 levels)	SIMATIC OP 177B Color (256 colors)
Functionality (with WinCC flexible)		
• Scheduler	Yes	Yes
• Help system	Yes	Yes
• Status/Control	with SIMATIC S7	with SIMATIC S7
Protocols		
• Interface to control (may only be an option)	S7-200, S7-300/400Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers	S7-200, S7-300/400Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
• Number of messages	2000	2000
• Discrete alarms	Yes	Yes
• Analog messages	Yes	Yes
• Message length (in characters)	80	80
• Number of process values per message	8	8
• Acknowledgement groups	99	99
• Message buffer	Battery-backed ring buffer, 256 entries each	Battery-backed ring buffer, 256 entries each
Recipes		
• Recipes	100	100
• Data records per recipe	200	200
• Entries/data record	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Process images	100	100
Picture elements		
• Text objects	2000 text elements	2000 text elements
• Graphics objects	Bitmaps, icons, icon (filling the screen), vector graphics	Bitmaps, icons, icon (filling the screen), vector graphics
• Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
- Number of bar graphs per project	500	500
- Number of curve diagrams per project	50	50

	SIMATIC OP 177B Bluemode (4 levels)	SIMATIC OP 177B Color (256 colors)
Lists		
• Text lists	300	300
• Graphics lists	100	100
• Libraries	Yes	Yes
• Variables	1000	1000
Security		
• Number of user groups	50	50
• Number of access rights	32	32
• Exportable passwords	Yes	Yes
Logging/printer driver		
• Printing/logging	Messages, report/log, color print, hardcopy	Messages, report/log, color print, hardcopy
• Printer driver	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Keyboard fonts	US English	US English
Languages		
• Online languages	5	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	Tahoma, WinCC flexible standard, ideographic languages, all freely scalable	Tahoma, WinCC flexible standard, ideographic languages, all freely scalable
Data carrier support (may only be an option)		
• MMC card	Yes	Yes
Expansion capability/openness		
• OPP	Yes	Yes
Transfer under ProTool (upload/download)		
• Transfer of the configuration	MPI/PROFIBUS DP (automatic transfer recognition)	MPI/PROFIBUS DP, Ethernet (automatic transfer recognition)

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SIMATIC OP 177B

Ordering data		Order No.
SIMATIC OP 177B		
Operator panel with 5.7" STN display,		
• Blue mode (4 levels)	B	**6AV6 642-0DC01-1AX0**
• Color (256 colors)	B	**6AV6 642-0DA01-1AX0**
incl. mounting accessories		
OP 177B starter kit	B	**6AV6 551-2HA01-1AA0**
Consisting of:		
• OP 177B with STN display, color		
• SIMATIC WinCC flexible 2005 Compact configuring software		
• SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian, Spanish)		
• MPI cable (5 m), PC/PPI cable		
• Software update service for 1 year		
Configuring		
• with SIMATIC WinCC flexible 2005 Compact		**6AV6 611-0AA01-1AA0**
Configuration set		
Consisting of: Configuration or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian and Spanish), PC/PPI cable, MPI cable (5 m)		
• with SIMATIC WinCC flexible Compact engineering software	D	**6AV6 621-0AA01-0AA0**
Documentation (to be ordered separately)		
Operating Instructions TP 177micro/TP 177A/TP 177B/ OP 177B (WinCC flexible)		
• German		**6AV6 691-1DG01-0AA1**
• English		**6AV6 691-1DG01-0AB1**
• French		**6AV6 691-1DG01-0AC1**
• Italian		**6AV6 691-1DG01-0AD1**
• Spanish		**6AV6 691-1DG01-0AE1**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection	C	**6AV6 691-1SA01-0AX0**
Electronic documentation, on CD-ROM		
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		

	Order No.
Accessories	
Accessories for supplementary ordering	
Cover foil (pack of 10)	**6AV6 671-2XC00-0AX0**
Protective cover (2 sets)	**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • 7 tensioning clamps • Plug-in terminal block (twin block)	**6AV6 671-2XA00-0AX0**
PROFIBUS connecting cable 830-1T For connection of data terminal, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m	**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)	**6GK1 500-0EA02**
IE FC RJ45 Plug 90 RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 90° cable outlet; for ET 200S; 1 pack = 1 unit	**6GK1 901-1BB20-2AA0**
IE FC RJ45 Plug 180 RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface; 1 pack = 1 unit	**6GK1 901-1BB10-2AA0**
90° angle adapter, 9-pin for RS422/485	**6AV6 671-8XD00-0AX0**
RS422-to-RS232 (V.24) converter Between TD/TP/OP and non-Siemens PLC with RS232 interface	**6AV6 671-8XJ00-0AX0**
Standard Multi Media Card	**6AV6 671-1CB00-0AX0**
System interfaces	See page 2/169
Connecting cables	See page 2/180

B) Subject to export regulations AL: N and ECCN: 5D002ENC3
C) Subject to export regulations AL: N and ECCN: EAR99S
D) Subject to export regulations AL: N and ECCN: 5D992B1

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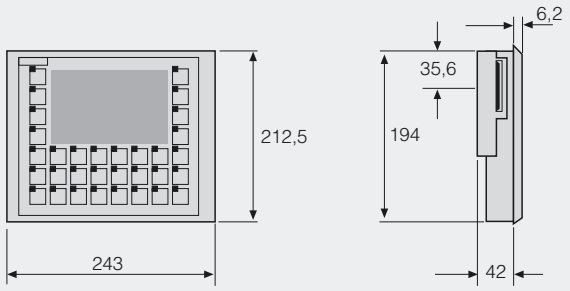
Dimension drawings

Dimensions in mm



More information

For further information, visit our website at

http://www.siemens.com/panels

Note

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.